Air Drop System (Air-suspension interface) EPAL-01

Level System Motorhome

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For CE-countries:
This device is in conformity with the CE standards. Please note that this device can ONLY be used with the official E&P Hydraulics level system parts to conform to these standards.

P/N EPAL-01 / ams – vers. june 2013

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Preface

The E&P Hydraulics Airsuspension interface works in combination with the E&P Hydraulics Motorhome levelsystem. The ergonomic design ensures effortless operation and will automatically enhance the levelling capability of the vehicle.

It is based on proven E&P Hydraulics technology which forms the basis of all our E&P Hydraulics products. After installation one button operates the entire system…..

Within the E&P Hydraulics strategic vision this products is 100% user friendly and reliable.

This philosophy not only applies to our customers (end users). The technicians installing this device/system at the E&P Dealers are also very important to us. This product greatly depends on a proper, professional installation. That's the reason why E&P Hydraulics do all they can do to support the people who are responsible for installing our products for you.

This manual is part of our policy. In this manual we explain the general features and how to install this product as simply as possible within the E&P Hydraulic level system.

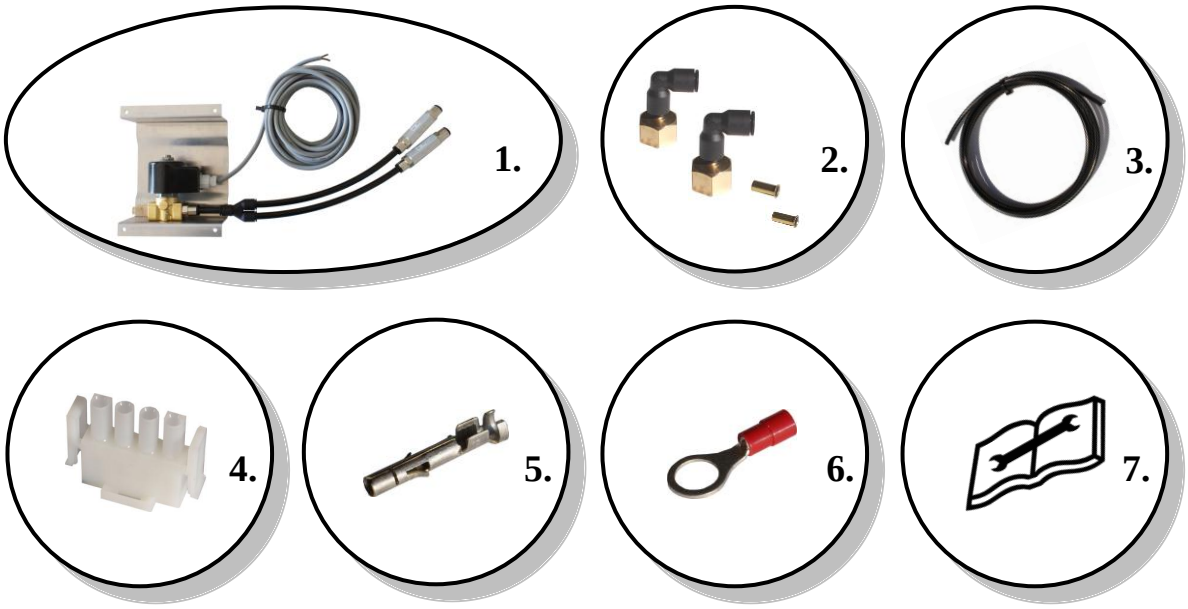
Precisely follow these instructions for the installation, because installing the E&P Hydraulics system is a precise job. Fully installing the system requires a high level of skill. After all, we are dealing with equipment that must be able to withstand huge forces, something that is often underrated by people with insufficient technical training. If the installation is not performed correctly, serious damages could result in a short time, and even personal injury. Therefore this system may only be installed by professional technicians with sufficient practical experience and a thorough relevant technical training. At all times, the installer will bear sole responsibility for the assembly of the system.

This document is based on hundreds of test hours as well as many successful installations. If you follow this manual step-by-step, you will see what a wonderful, user friendly, quality product this is. However, there will always be aspects that can be improved. If you have any suggestions, remarks or questions concerning this product or manual, please do not hesitate to contact us.

On behalf of E&P Hydraulics

1.1 Unpacking

Remove the parts and accessories from the box and packing material. Refer to the packing list to make sure you have received all the items ordered. Visually inspect these parts for any evidence of physical damage. Immediately contact E&P Hydraulics if anything appears to be damaged, or missing.



Contents:

The system (set) consists of the following components.

1. Airdrop Valve	1pcs.	consists of : valve set, y-splitter, air-hose, 2 return valves, electric cable and Mounting frame
2. Nipples	2 pcs.	incl. 2 tubes for mounting into nipples
3. Hose	1 pcs.	Length apr. 2,5 m. / diameter 8 mm.
4. Connector	1 pcs.	AMP - 4 pole mounting to the Main-unit
5. Connector-pin	1 pcs.	AMP - mounting into 4 pole connector
6. Faston terminal	1 pcs.	for the purpose of connecting to the pump (batt-)
7. User's manual	1 pcs.	how to mount

Attention:

- Details may differ from the illustration above, but functionality should be identical.

1.2 Introduction

1.2.1 Purpose

Hereby we would like to inform you about the E&P Hydraulics Air-drop system.

This system makes it possible to keep the vehicle as low as possible to the ground, when using the automatic leveling system of E&P Hydraulics.

For some time E&P Hydraulics has offered a module to integrate the E&P levelsystem with the air-suspension system from VB-Airsuspension to enhance the User's experience when both systems are fitted to the same vehicle. The part number for this module is EP-L50-01-VB.

However, some motorhomes use different air-suspension systems and since, in practice, it is difficult to predict how this integration/compatibility would work, E&P Hydraulics has now developed an independently functioning solution – the Air Drop system – which is applicable to almost all other types of motorhome air-suspension.

1.2.2 General

The system is designed so that it usable both for the front and rear axle air suspension (where fitted).

The system is designed to lower the motorhome as low as possible to the ground, to create the lowest step-height possible and to give the hydraulic jacks the maximum leveling stroke possible.

In other words, when the vehicle floor is as low as possible to the ground, the effectiveness of the level system will be enhanced.

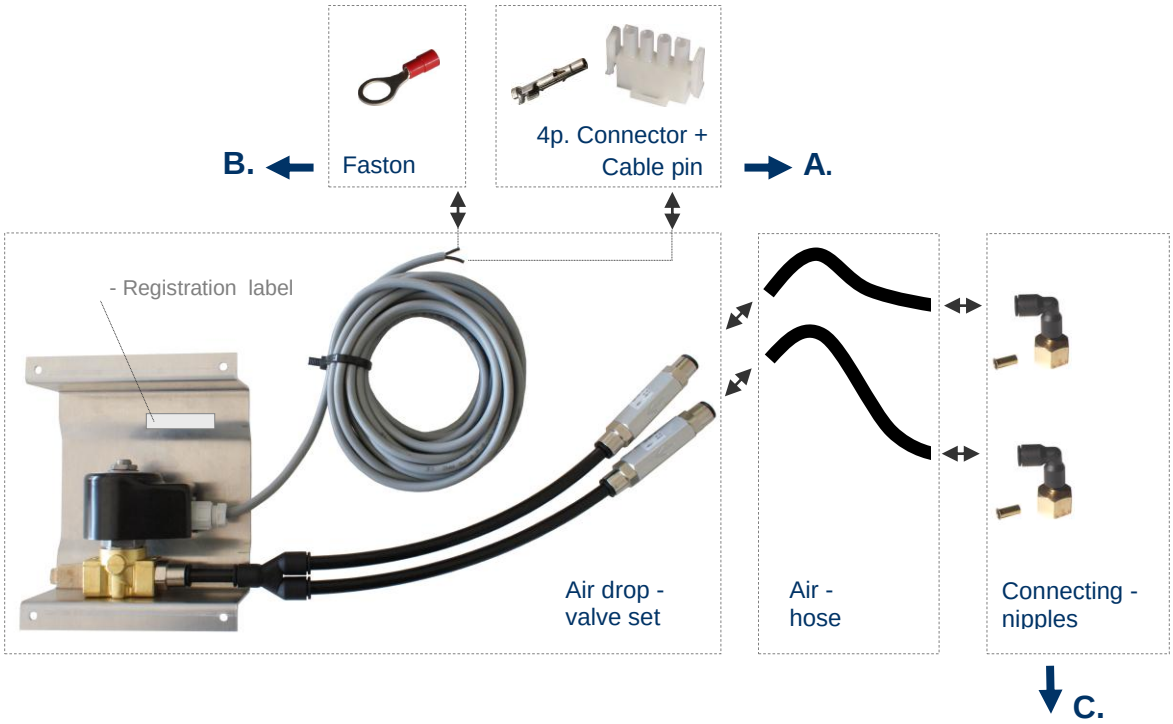
1.2.3 Definitions

Air Drop system : Controlled air release to allow the vehicle to be dropped to its lowest position automatically.

1.3 Schematic view

Schematic view of the components supplied within the E&P Hydraulics Air Drop system:

Note: This is the display for 1 set



A. = Connection to Main-box

B. = Connection to Pump (Batt -)

C. = Connection to Air - suspension

For traceability and warranty administration the registration number label is placed inside the product, to be sure it remains undamaged. This official registration number is directly related / unique to the device.

E&P Hydraulics, or the E&P Dealer, may ask you for this number (e.g. when the product needs to be serviced), so please familiarise yourself with it.

2. Installation

Before you start the installation procedure of the Air Drop system, you must be sure the E&P Hydraulic level system is professionally installed and is functioning correctly.

Attention ! Be aware you are dealing with equipment that must be able to withstand huge forces!

Before: (important)

Before mounting the Air Drop system, check that the E&P Hydraulics levelsystem has the correct version ** of control unit (Main Unit) supplied.

** this check can be done visually (see below).

If an antenna connection is present on the Main Unit then the E&P Air Drop system can be installed without problems.

Is this antenna connection is not present, you will need to upgrade the Main Unit.

- **WITH** antenna connection

- **WITHOUT** antenna connection

2. **Installation** (continued)

Step 1 : Mounting Nipples and Valve

Mount the angled nipples on the front or rear (emergency) valve ** connections present on the suspension-bellows.

** In most cases, this emergency valve is provided. If not, the connection is intended to be effected by interrupting the air conduit, using the T-piece provided.

Determine the length of the air-hose. Place the copper insert, supplied with the nipple set, in the air-hose (do not forget!) and push the hose firmly into the nipple by pressing.

Step 2 : Mounting to the vehicle

Mount the Air Drop system in the most suitable location (depending on the vehicle type, this will vary). This location is as close as possible to the front or rear axle and between the two air-bellows.

Mount the set in such a way that the side walls of the assembly (protection) plate are in the direction of travel of the vehicle, just to give the valve the maximum protection against splash water and dirt.

Note: please make sure that you have installed the air-hoses in such a way that they can move freely through the full suspension travel of the vehicle. Please make sure they do not get pinched.

DIRECTION OF TRAVEL

2. **Installation** (continued)

Before: A two-wire electrical cord is mounted to the air outlet valve. It does not matter which of the 2 cables you are taking for the connection of the connector pin and faston.

Step 3 : Mounting the connector pin into the connector

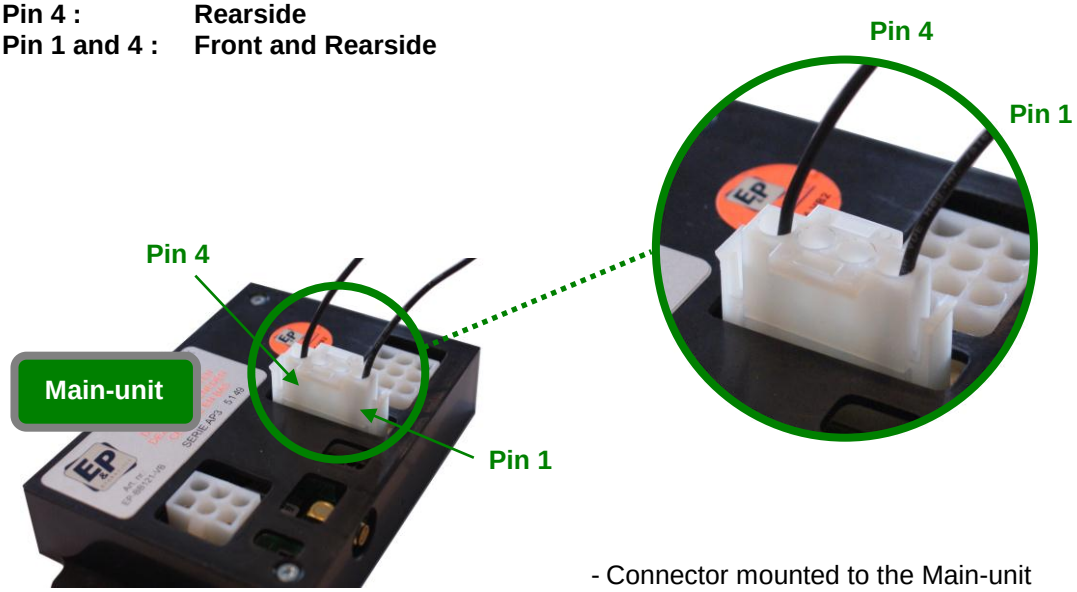
Strip the electric wire over a distance of approximately 5mm. Mount the connector pin using an "AMP-tang" to the wire and solder it.

Depending on whether you use the airdrop system for the FRONT and-or REAR of your vehicle, mount the connector pin in position 1 (front) and-or 4 (rear)
of the 4 pins AMP connector.

Step 4 : Mounting the connector to the Main-unit

Depending on whether you are going to use the airdrop system on the FRONT and-or REAR of you vehicle, 1 or 2 electric cables are mounted into the 4p. connector.

Pin 1 : **Frontside**
Pin 4 : **Rearside**
Pin 1 and 4 : **Front and Rearside**



- Connector mounted to the Main-unit

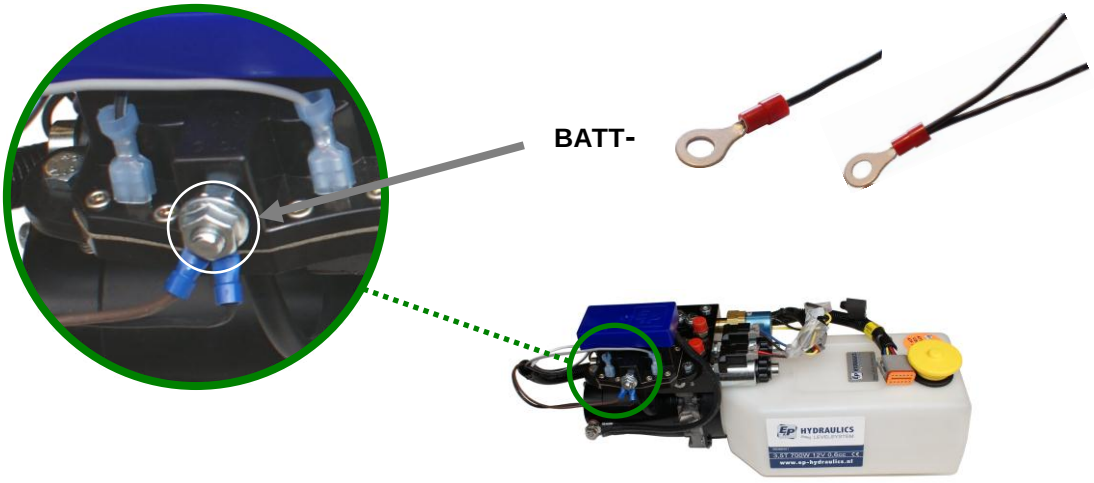
2. **Installation** (continued)

Step 5 : Mounting the electric cable to the hydraulic pump

Strip the electric wire over a distance of approximately 5mm. Mount the faston to the cable and solder it.

Mount the wire to the pump relay connection (BATT -), which is located on the pump operating the E&P Hydraulic levelsystem.

In the event you have connected two sets (both front and rear Air Drop system fitted) it allows you to mount the 2 electrical wires into 1 faston.



3. Programming

Programming the Air Drop system

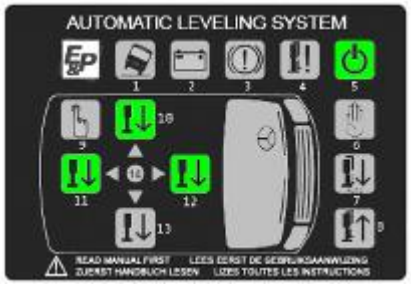
3.1 Before

To programme your Air Drop system, you now have two options: operating your system by the Remote control, or the (built in) Control panel.

The operation of the remote control and control panel is described in the E&P Hydraulics User manual for the Motorhome.

3.2 Teaching (setting defaults)

Make sure the vehicle is placed on a surface that is as flat as possible. Make sure that the vehicle's handbrake and ignition is on



- Press the on/off button (No. 5), once, on the control panel.

  The LED of the E&P logo lights up.

  If the handbrake is disengaged, the warning LED (No.3) starts to flash

- Press button frontside (No. 12) five times
- Press button rearside (No. 11) five times
- Press button leftside (No. 10) one time
- Lower the suspension by using the existing control system of the vehicle.
  At this stage you have to make the choice of how far you want to lower the vehicle.
  This choice is, from now on, the actual (preset) position/angle the vehicle will lower to.
- Press button leftside (No. 10) once

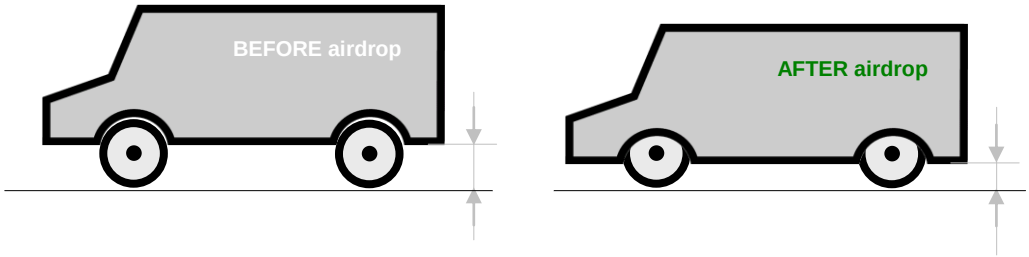
The system is now programmed

Note: the system has been designed so that the air-suspension will only drop air when it improves the programmed level. (level point)

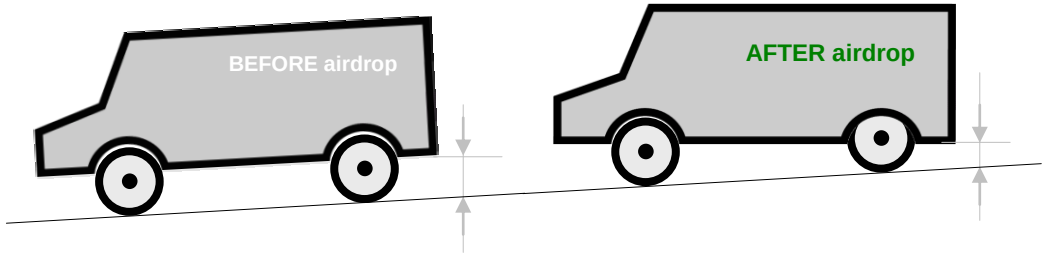
3. **Programming** (continued)

What (which vehicle positions) you can expect in practical situations.

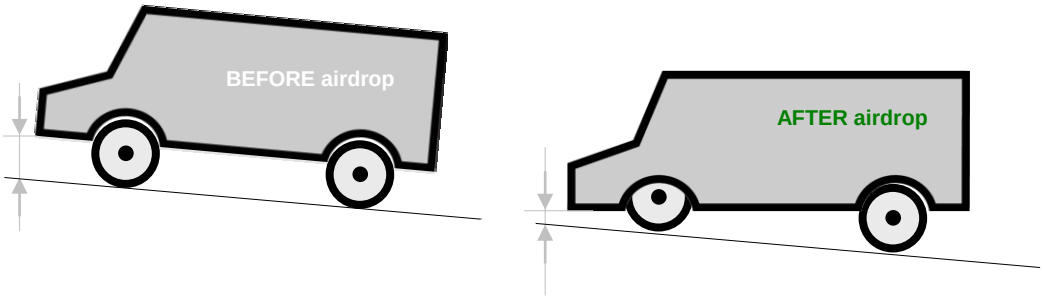
Situation A : front **EQUAL** to rear.



Situation B : **REAR HIGHER** than front..... **Method**: drop air on the **REAR**.



Situation C : **FRONT HIGHER** than rear..... **Method**: drop air on the **FRONT**.



The system first lowers the air-suspended axle which is in the higher position.

It is lowered so far, that the second axis can be lowered sufficiently also.
This sequence is necessary to make it possible leveling the vehicle from the lowest point.

When the air drop system is connected, during the programming procedure the preset level value will automatically be adjusted in the longitudinal direction

If a tilt situation is too severe, the control panel shows a warning signal (No.1)

4. Specifications

Electrical :

Voltage	12V / 24V

Physical :

Weight (complete set)	apr. 1.000 Gr.

Dimensions :

Length x Width x Height	apr. 150 x 120 x 50 mm.

Environmental :

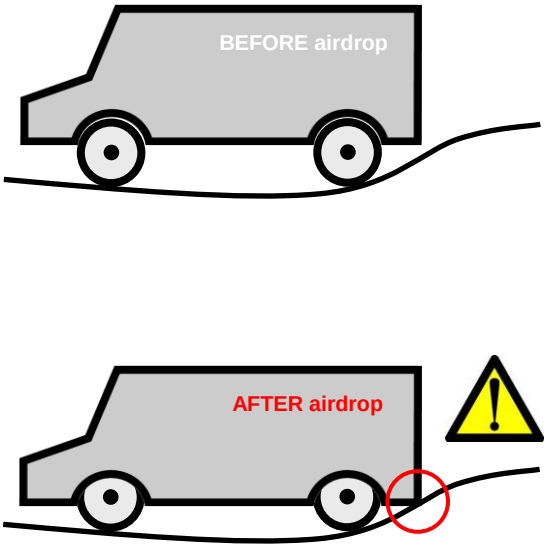
Operating temperature	- 40˚C / + 40˚C
Humidity	20% - 95% RH (non-condensing)

5. Avoid dangerous situations

5.1 Lowering the Airsuspension system on a rising slope position

- E&P Hydraulics considers dropping air at a rising slope position as a dangerous situation. When dropping too much air, the rear side of the vehicle could make contact with the ground.

Note: This problem could be solved by mounting an on/off switch between the Earthwire (-) of the front and rear axle.



CAUTION ! Take precautions when you start using the system: Make sure that there are no persons (or animals) under the vehicle who could get trapped during the level, and-or airdrop process.

LEVELSYSTEM

www.ep-hydraulics.nl

Made in Holland